



Main characteristics

1314, 1327 and 1390 Series with the suffix “UC” solenoid valves are specially designed to control cryogenic flow. Cryogenic fluids include liquid oxygen, liquid argon, liquid nitrogen and liquid CO₂. All valves showing a UC suffix are clean, and free from oil and moist.

Temperature ranges:

Cryogenic fluids -200 °C to 50 °C (-328 °F to 122 °F).
Liquid CO₂ : -60 °C to 50 °C (-76 °F to 122 °F).

Technical specifications

Construction Materials

Body: Brass or bronze.
Seals and seats: PTFE.
Piston: 1314 Series: SS304 / 1390 Series: Brass.
Core assembly and magnetic stop: AISI 430.
Springs: 302.
Shading coil: copper.

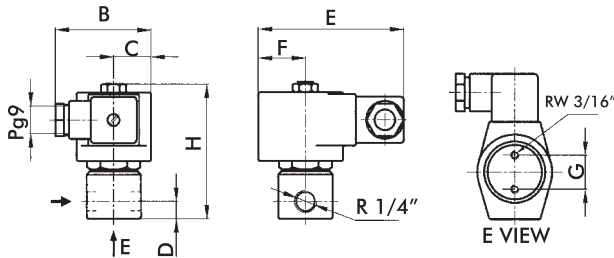
***Advise:** when using direct current (DC), a 25% reduction on the maximum operating pressure differential is expected

Normally Closed																			
Ø Pipe ins.	Ø Orifice		Flow factor		Δp minimum		Δp * maximum		Minimum Temp.		Maximum Temp.		Weight		Catalog No				
	mm	ins.	Kv	Cv	bar	psi	bar	psi	C°	F°	C°	F°	kg	Lb					
1/4"	3	0.12	0.26	0.30	0	0	10	150	-200	-328	50	122	0.5	1.1	1327BT302UC				
	4	0.16	0.43	0.50			5	75					0.5	1.1	1327BT402UC				
	6	0.24	0.8	0.94			0.75	1.7					1390BBT2UC						
3/8"	9	0.35	1.6	1.87	0.1	1.5	15	225					0.70	1.5	1390BBT3UC				
	12	0.47	2.35	2.75			0.96	2.1					1390BBT4UC						
1/2"	19	0.75	4.5	5.27	0	0	7	105					4	8.9	1314BST04UC				
	3/4"	19	0.75	6			7.02	4					8.9	1314BST06UC					
1"	26	1.02	10	11.7			4.9	10.9					1314BST08UC						
1 1/2"	32	1.26	15	17.6			6.5	14.4					1314BST12UC						
2"	38	1.5	23	26.9			7.3	16.2					1314BST16UC						
Normally Open																			
1/4"	3	0.12	0.26	0.30	0	0	10	150	-200	-238	50	122	0.5	1.1	1327BT302UCINA				
	4	0.16	0.43	0.50			5	75					0.5	1.1	1327BT402UCINA				
	6	0.24	0.8	0.94			0.75	1.7					1390BBT2UCINA						
3/8"	9	0.35	1.6	1.87	0.1	1.5	15	225					0.70	1.5	1390BBT3UCINA				
1/2"	12	0.47	2.35	2.75			0.96	2.1					1390BBT4UCINA						
Liquid CO ₂ service (1) Normally Closed																			
1/8"	1.25	0.5	0.05	0.06	0	0	100	1500					-60	-76	50	122	0.5	1.1	1327BT121UC
	1.75	0.07	0.09	0.11			35	525									0.5	1.1	1327BT171UC
	2.25	0.09	0.13	0.15			20	300									0.5	1.1	1327BT221UC
	3.00	0.12	0.26	0.30			10	150									0.5	1.1	1327BT301UC
Liquid CO ₂ service (1) Normally Open																			
1/8"	1.25	0.5	0.05	0.06	0	0	50	750					-60	-76	50	122	0.5	1.1	1327BT121UC
	1.75	0.07	0.09	0.11			20	300	0.5	1.1	1327BT171UC								
	2.25	0.09	0.13	0.15			12	180	0.5	1.1	1327BT221UC								
	3.00	0.12	0.26	0.30			10	150	0.5	1.1	1327BT301UC								

(1) Connection pipe: Inside diam. cannot be larger than valve’s passage. The expansion will occur downstream, far away from valve. It prevents CO₂ from freezing.

General dimensions

1327 UC



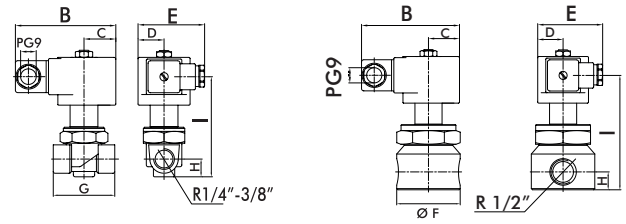
B	C	D	E	F	G	H
57	22	10	85	27	20	80

Measurements: mm

B	C	D	E	F	G	H
2.24	0.87	0.39	3.35	1.06	0.79	3.15

Measurements: ins.

1390 UC



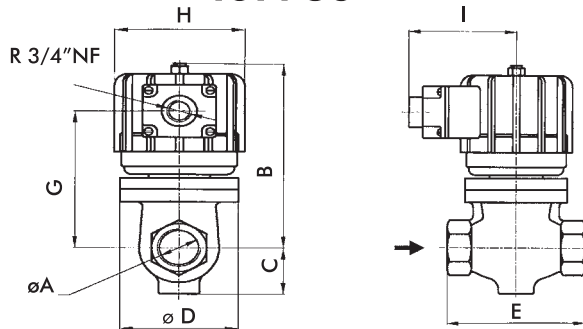
Ø A	B	C	D	E	Ø F	G	H	I
1/4" - 3/8"	85	26	22	57	-	52	15	97
1/2"	85	26	22	57	55	-	15.5	99

Measurements: mm

Ø A	B	C	D	E	Ø F	G	H	I
1/4" - 3/8"	3.35	1.06	0.87	2.24	-	2.05	0.59	3.82
1/2"	3.35	1.02	0.87	2.24	2.17	-	0.61	3.89

Measurements: ins.

1314 UC



Ø A	B	C	Ø D	E	F	G	Ø H	I
R 3/4"	150	32	76	100	80	113	99	95
R 1"	157	41	90	120	89	120		
R 1.1/2"	180	49	100	149	97	143		
R 2"	180	51	100	149	100	147		

Measurements: mm

Ø A	B	C	Ø D	E	F	G	Ø H	I
R 3/4"	5.91	1.26	2.99	3.94	3.15	4.45	3.90	3.74
R 1"	6.18	1.61	3.54	4.72	3.50	4.72		
R 1.1/2"	7.09	1.93	3.94	5.87	3.82	5.63		
R 2"	7.09	2.01	3.94	5.87	3.94	5.79		

Measurements: ins.

Coil characteristics

Electric power supply	Version	Coil type	Power W	VA (volt-amp)		Maximum temperature		Available tensions
				Inrush	Holding	°C	°F	
AC 50 Hz	1327UC	MF11C	11	40	22	155	311	1
AC 60 Hz		MF13C	13	45	27	155	311	2
DC	1390UC	MH19C	19	19	19	155	311	3
AC 50 Hz	1327UC (CO ₂)	MH18C	18	61	39	180	356	1
AC 60 Hz		MH16C	16	48	29	180	356	2
DC		MH19C	19	19	19	180	356	3
AC 50 Hz	1314UC	SH28C	28	241	69	155	311	1
AC 60 Hz		SH30C	30	267	80	155	311	2
DC		SH48C	48	48	48	155	311	3

1-(12,24,110,220,240)V 2-(12,24,110,120,220,240)V 3-(12,24,110,220)V

Recommendations for installation

Place a strainer with a porosity ≤ 100 μ upstream the valve. The valve input pressure must always be equal or greater than the output pressure.

1327UC - 1390UC

Mount the valve in any position, preferably over horizontal pipeline with the coil upright.

1314UC

Mount the valve only over horizontal pipeline with the coil upright.